

In the Claims:

Claims 1 through 43 (cancelled).

44. (New) An antibody, or antibody fragment, that specifically binds to a Zins2 testis-specific insulin homolog polypeptide, wherein the Zins2 polypeptide has an amino acid sequence comprising SEQ ID NO:13.
45. (New) The antibody, or antibody fragment, of claim 44, wherein the antibody, or antibody fragment, is selected from the group consisting of: (a) a polyclonal antibody, (b) a murine monoclonal antibody, (c) a humanized antibody derived from (b), (d) a chimeric antibody, (e) a neutralizing antibody, (f) a single chain antibody, and (g) a human monoclonal antibody.
46. (New) The antibody fragment of claim 44, wherein the antibody fragment is selected from the group consisting of: (a) an F(ab')₂ fragment, (b) an Fab proteolytic fragment, and (c) an Fv fragment.
47. (New) The antibody, or antibody fragment of claim 44, wherein the antibody or antibody fragment, further comprises a radionuclide, enzyme, substrate, cofactor, fluorescent marker, chemiluminescent marker, peptide tag, magnetic particle, drug, or toxin.
48. (New) An antibody, or antibody fragment, wherein the antibody, or antibody fragment, specifically binds to an epitope of a Zins2 testis-specific insulin homolog polypeptide, wherein the Zins2 polypeptide has an amino acid sequence comprising SEQ ID NO:13.
49. (New) The antibody, or antibody fragment of claim 48, wherein the epitope is selected from the group consisting of:
- (a) an epitope consisting of the amino acid sequence of SEQ ID NO:13 from amino acid number 20 (Ser) to amino acid number 54 (Arg),
 - (b) an epitope consisting of the amino acid sequence of SEQ ID NO:13 from amino acid number 21 (Arg) to amino acid number 53 (Phe),

- (c) an epitope consisting of the amino acid sequence of SEQ ID NO:13 from amino acid number 23 (Leu) to amino acid number 53 (Phe),
- (d) an epitope consisting of the amino acid sequence of SEQ ID NO:13 from amino acid number 23 (Leu) to amino acid number 54 (Arg),
- (e) an epitope consisting of the amino acid sequence of SEQ ID NO:13 from amino acid number 33 (Cys) to amino acid number 46 (Gly),
- (f) an epitope consisting of the amino acid sequence of SEQ ID NO:13 from amino acid number 35 (Arg) to amino acid number 41 (Ile),
- (g) an epitope consisting of the amino acid sequence of SEQ ID NO:13 from amino acid number 172 (Arg) to amino acid number 213 (Tyr),
- (h) an epitope consisting of the amino acid sequence of SEQ ID NO:13 from amino acid number 173 (Gly) to amino acid number 198 (Phe),
- (i) an epitope consisting of the amino acid sequence of SEQ ID NO:13 from amino acid number 173 (Gly) to amino acid number 199 (Lys),
- (j) an epitope consisting of the amino acid sequence of SEQ ID NO:13 from amino acid number 173 (Gly) to amino acid number 200 (Arg),
- (k) an epitope consisting of the amino acid sequence of SEQ ID NO:13 from amino acid number 55 (Phe) to amino acid number 172 (Arg), and
- (l) an epitope consisting of the amino acid sequence of SEQ ID NO:13 from amino acid number 201 (Leu) to amino acid number 213 (Tyr).

- C 2
- 50. (New) The antibody of claim 48, wherein the antibody is selected from the group consisting of: (a) a polyclonal antibody, (b) a murine monoclonal antibody, (c) a humanized antibody derived from (b), (d) a chimeric antibody, (e) a neutralizing antibody, (f) a single chain antibody, and (g) a human monoclonal antibody.
 - 51. (New) The antibody fragment of claim 48, wherein the antibody fragment is selected from the group consisting of: (a) an F(ab')₂ fragment, (b) an Fab proteolytic fragment, and (c) an Fv fragment.
 - 52. (New) The antibody of claim 48, wherein the antibody or antibody fragment, further comprises a radionuclide, enzyme, substrate, cofactor, fluorescent marker, chemiluminescent marker, peptide tag, magnetic particle, drug, or toxin.

53. (New) An antibody comprising a monoclonal antibody that specifically binds to SEQ ID NO:13.
54. (New) The antibody of claim 53, wherein the antibody further comprises a radionuclide, enzyme, substrate, cofactor, fluorescent marker, chemiluminescent marker, peptide tag, magnetic particle, drug, or toxin.
55. (New) The antibody of claim 53, wherein the antibody is selected from the group consisting of: (a) a murine monoclonal antibody, (b) a humanized antibody derived from (a), (c) an antibody fragment, (d) a human monoclonal antibody, (e) a chimeric antibody, (f) a neutralizing antibody, and (g) a single chain antibody.
56. (New) An antibody, or antibody fragment, wherein the antibody, or antibody fragment, specifically binds to an epitope of a Zins2 testis-specific insulin homolog polypeptide, wherein the Zins2 polypeptide has an amino acid sequence consisting of SEQ ID NO:13.
57. (New) The antibody, or antibody fragment of claim 56, wherein the antibody, or antibody fragment, is selected from the group consisting of: (a) a polyclonal antibody, (b) a murine monoclonal antibody, (c) a humanized antibody derived from (b), (d) a chimeric antibody, (e) a neutralizing antibody, (f) a single chain antibody, and (g) a human monoclonal antibody.
58. (New) The antibody fragment of claim 56, wherein the antibody fragment is selected from the group consisting of: (a) an F(ab')₂ fragment, (b) an Fab proteolytic fragment, and (c) an Fv fragment.
59. (New) The antibody, or antibody fragment of claim 56, wherein the antibody or antibody fragment, further comprises a radionuclide, enzyme, substrate, cofactor, fluorescent marker, chemiluminescent marker, peptide tag, magnetic particle, drug, or toxin.
60. (New) A method of producing an antibody to a polypeptide comprising:
- (i) inoculating an animal with a polypeptide selected from the group consisting of:

- (a) a polypeptide consisting of the amino acid sequence of SEQ ID NO:13 from amino acid number 20 (Ser) to amino acid number 54 (Arg),
- (b) a polypeptide consisting of the amino acid sequence of SEQ ID NO:13 from amino acid number 21 (Arg) to amino acid number 53 (Phe),
- (c) a polypeptide consisting of the amino acid sequence of SEQ ID NO:13 from amino acid number 23 (Leu) to amino acid number 53 (Phe),
- (d) a polypeptide consisting of the amino acid sequence of SEQ ID NO:13 from amino acid number 23 (Leu) to amino acid number 54 (Arg),
- (e) an epitope consisting of the amino acid sequence of SEQ ID NO:13 from amino acid number 33 (Cys) to amino acid number 46 (Gly),
- (f) an epitope consisting of the amino acid sequence of SEQ ID NO:13 from amino acid number 35 (Arg) to amino acid number 41 (Ile),
- (g) a polypeptide consisting of the amino acid sequence of SEQ ID NO:13 from amino acid number 172 (Arg) to amino acid number 213 (Tyr),
- (h) a polypeptide consisting of the amino acid sequence of SEQ ID NO:13 from amino acid number 173 (Gly) to amino acid number 198 (Phe),
- (i) a polypeptide consisting of the amino acid sequence of SEQ ID NO:13 from amino acid number 173 (Gly) to amino acid number 199 (Lys),
- (j) a polypeptide consisting of the amino acid sequence of SEQ ID NO:13 from amino acid number 173 (Gly) to amino acid number 200 (Arg),
- (k) a polypeptide consisting of the amino acid sequence of SEQ ID NO:13 from amino acid number 55 (Phe) to amino acid number 172 (Arg),
- (l) a polypeptide consisting of the amino acid sequence of SEQ ID NO:13 from amino acid number 201 (Leu) to amino acid number 213 (Tyr), and
- (m) a polypeptide consisting of the amino acid sequence of SEQ ID NO:13,

wherein the polypeptide elicits an immune response in the animal to produce the antibody; and

- (ii) isolating the antibody from the animal,

wherein the antibody specifically binds to a Zins2 testis-specific insulin homolog (SEQ ID NO:13).

61. (New) The antibody of claim 60, wherein the antibody is selected from the group consisting of: (a) a polyclonal antibody, (b) a murine monoclonal antibody, (c) a humanized antibody derived from (b), (d) a chimeric antibody, (e) a neutralizing antibody, (f) a single chain antibody, and (g) a human monoclonal antibody.

- CJ
Concl
62. (New) The antibody of claim 60, wherein the antibody further comprises a radionuclide, enzyme, substrate, cofactor, fluorescent marker, chemiluminescent marker, peptide tag, magnetic particle, drug, or toxin.
-